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(54) **A parasol space heater**

(57) A gas parasol space heating appliance is provided, comprising a base structure (51) for housing a bottle of gas, the base structure supporting a pole (52), the pole supporting a gas burner (53) arrangement with a dish deflector (54) supported thereon, in which the deflector dish (54) is collapsible and has a sufficient depth so as to extend substantially to or below the level of the base of the burner (53). The dish is preferably made in multiple sections (73, 82) which may be engaged together, or may be folded or fanned out to assemble the dish, or may be made of metal or metalized fabric in an umbrella structure. In another embodiment, the pole (2) is offset to one side of the base structure (1), and only the ground-engaging part (10) of the base structure is adapted to bear the load of the pole.

The base structure has a top surface (59,9) which may be used as a small table or tray surface, and a larger extended table (30) may be fitted on top of this. All of the components, with the exception of the bottled gas and ballast for the base, which are supplied by the user, may be broken down and fitted into a single box for ease of shipping, and handling by the retailer and purchaser.

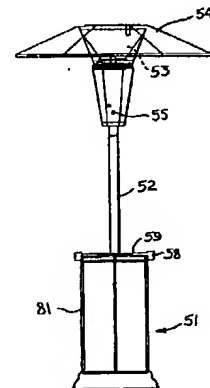


FIG. 1

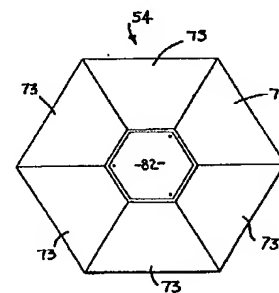


FIG. 2

Description

Field of the Invention

[0001] The present invention relates to a parasol space heater, in particular to an improved gas parasol heater for outdoor use, for example to provide space heating outside restaurants and on garden patios.

Background of the Invention

[0002] Gas parasol heaters currently available comprise a base structure for housing a bottle of propane gas, supporting a pole through which the gas is piped to an overhead burner. The burner supports a radiant dish or parasol which deflects heat from the burner downwards in an area generally surrounding the base. Gas parasol heaters have become popular in cooler climates throughout Europe and the U.S.A. Although over 2 metres in height, the parasol dish is generally less than one metre in diameter, and the overall structure resembles a lamp post, and is therefore relatively discreet and takes up little space.

[0003] In prior art gas parasol heaters, the radiant dish is made from a single piece of pressed aluminium or the like, and on account of its size and bulk relative to the other components, must be packed separately, for delivery to a retailer and prior to assembly by the purchaser. This increases transport and shipping and warehousing costs, and ultimately the cost to the purchaser. Moreover, this method of manufacture of the dish makes it difficult to exceed a certain depth for the dish, with the result that in prior art gas parasol heaters, when assembled for use, the dish is relatively shallow and the rim of the dish does not extend to or below the level of the base of the gas burner. With this design, it has been found that, when a sudden or severe gust of wind comes from the side, when the burner is lit, "flame lift-off" can occur, with very dangerous consequences. In less windy conditions, heat is still lost to each side and not deflected downwardly to a sufficient extent, over the relatively small area below the heater where people may be sitting. It is thus an object of the present invention to provide an improved dish design in a gas parasol heater, which overcomes all of these difficulties. An important objective is therefore to provide a gas parasol heater with a dish which has sufficient depth to extend to or below the level of the base of the burner, in use, for protecting the burner when lit from side gusts of wind. A particular objective is also to provide a gas parasol heater in which all of the components, with the exception of the bottled gas and ballast, which are supplied by the user, may be broken down and fitted into a single box for ease of shipping, and handling by the retailer and purchaser.

[0004] For further safety reasons, the base structure is normally weighted although wheels may be provided for moving the heater when not in use. In currently avail-

able gas parasol heaters, the base structure is therefore heavy and cumbersome. The cylindrical walls of the base structure are load-bearing, supporting the weight or some of the weight of the pole, which is always centrally located in the base, terminating at the top of the base structure. This means that there is limited space available in the cylindrical walls of the base structure for a door providing access to the space where the bottled gas is located. This makes it difficult to change a bottle of gas, or to turn on the gas or inspect the gas fittings. Furthermore, on account of the central location of the pole in the base, the top surface of the base structure is not a usable surface, and in many designs is formed by a convex top.

[0005] In an alternative embodiment of the invention, an objective is to provide a gas parasol heater with a lightweight base structure, permitting moulding from plastics components, thereby reducing unit manufacturing costs. It is also desirable to provide a gas parasol heater with easier access to the bottle of gas which is held in the base compartment.

[0006] In another embodiment, it is an objective to provide a base structure with a top surface which may be used as a small table or tray surface. The table or tray surface may be fitted as a separate component, over and resting on the base structure, and/or may be formed by a specially adapted flat surface on the top of the base structure.

Summary of the Invention

[0007] Accordingly, the present invention provides a gas parasol space heating appliance, comprising a base structure for housing a bottle of gas, the base structure supporting a pole, the pole supporting a gas burner arrangement with a dish deflector supported thereon, characterized in that the deflector dish is collapsible and sufficient depth so as to extend substantially to or below the level of the base of the burner, when in use and when mounted over the gas burner.

[0008] Preferably, two to six separate dish sections are provided, which may be engaged or hinged together wherein the diameter of the assembled dish is greater than one metre, preferably about 1.1 to 1.2 metres, most preferably 1.125 metres. The depth of the assembled dish is preferably in the range of about 180 to 240 millimetres. The top of the assembled dish preferably includes a flat surface.

[0009] In another embodiment, multiple curved dish sections are provided prior to assembly already attached at the apex, adapted to be folded or fanned out to form a rigid dish structure in the assembled heating appliance.

[0010] In a further embodiment, the deflector dish is comprised of a collapsible umbrella structure, made of metallic fabric or metal-coated heat-resistant fabric.

[0011] In a yet further embodiment, the pole is offset to one side of the base structure, and only the ground-

engaging part of the base structure is adapted to bear the load of the pole. Advantageously, the top and the walls of the base structure do not bear any substantial loading force from the pole, and may be made of lightweight materials. The top of the base structure is preferably moulded from plastics material and is preferably adapted so as to include the outer table or tray surface.

Brief Description of Drawings

[0012]

Figure 1 is a side elevation of a first embodiment of a gas parasol heating appliance in accordance with the invention, with a central pole, and with the base shown in cross section;

Figure 2 is a plan view from above of the gas parasol heating appliance of Figure 1, showing an assembled dish made of six sections;

Figure 3 is a front perspective view of a second embodiment of a gas parasol heating appliance in accordance with the invention, with an offset pole;

Figure 4 is a partial cross-section of the gas parasol heating appliance of Figure 3, in side elevation;

Figure 5 is a cross-section of the moulded top part of the base structure of the embodiment shown in Figures 3 and 4;

Figure 6 is a cross-section of the moulded bottom part of the base structure of the embodiment shown in Figures 3 to 5;

Figure 7 is a plan view from above of the assembled dish comprising four sections, in the embodiment shown in Figures 3 to 6;

Figure 8 is a perspective view of an alternative table arrangement, in which a separate extended table surface is shown in solid outline placed over the base in the embodiment shown in Figures 3 to 7, and in dashed outline in respect of the embodiment shown in Figures 1 and 2;

Figure 9 is a plan view from above of a third embodiment of a gas parasol heater in accordance with the invention, with a fold-out dish; and

Figure 10 is a side elevation of a fourth embodiment of the gas parasol heater in accordance with the invention, with a collapsible umbrella dish.

Detailed description

[0013] Preferred embodiments of a gas parasol heater in accordance with the present invention will now be described with reference to the accompanying drawings.

[0014] With reference to Figures 1 and 2 of the drawings, which show a particularly preferred embodiment of the invention, comprises a base structure 51, a centrally located pole 52, a gas burner 53 and a dish parasol 54. The gas burner 53 and gas regulator 55 are of known construction in conformance with European Standard

EN 1643 and will not be described. It is preferable that the gas burner is in the shape of an inverted cone, and is internally insulated, for example with gypsum, for greater heat output and for deflecting more heat downwards. The centrally located pole 52 and rigid pole supports 81 inside the base structure 51 are all of known construction. The pole 52 supports the burner 53 and dish 54 and is hollow, providing a conduit for the gas supply from a bottle of propane gas (not shown) housed within the base 51, in use. The novel features of the illustrated design include a dish made from six separate like components 73 which are fastened together to provide the hexagonal parasol dish, when viewed from above, as seen in Figure 2. A smaller flat hexagonal section 82 forms a crown and holds the six sections 73 together. From Figure 1 it will be seen that the assembled dish extends to near the level of the base of the burner 53, when viewed from the side. In tests, this advantageous dish configuration has resisted dangerous "flame lift-off" with side wind speeds of up to 10 metres per second.

[0015] The pole 52 protrudes through the centre of the top section 58 of the base to present a useful surface area 59 which may be adapted as a small table or tray surface.

[0016] With reference to Figures 3 and 4 of the drawings, a gas parasol heater in accordance with another embodiment of the invention comprises a base structure 1, an off-centre pole 2, a gas burner 3 and a dish parasol 4.

[0017] Figure 3 illustrates more clearly how the pole 2 is offset from the centre of the base structure, extending through the base structure and to one side of a bottle 6 of propane gas which is held in a compartment therein. A supply conduit 7 is led up the pole from the bottle 6 to the gas burner 3 in a known manner. The offset positioning of the pole 2 is advantageous because it allows the top section 8 of the base to present a useful surface area 9 which may be adapted as a small table or tray surface.

[0018] The top section 8 may be moulded in plastics material, and is non-load-bearing.

[0019] The bottom section 10 of the base 1 (see Fig. 3) may also be moulded in plastics material. A tubular part 11 houses the pole 2 and bears sideways loading stresses by means of top gussets 12 and bottom gussets 13. For additional strength, a metal plate, with a hole to accommodate the pole, may be bolted to the underside of the bottom section 10, if required. A compartment 14 is formed by walls 15 into which ballast in the form of sand or concrete is placed by the user, for safety reasons and for supporting the pole. Five ground-engaging legs 16 support the entire structure, but a ground-engaging jockey wheel 17 may also be provided, for moving the heater when tipped to one side, to disengage the legs 16.

[0020] Surprisingly, the offset positioning of the pole does not substantially affect the centre of gravity or sta-

bility of the gas parasol heater, as compared with currently available models.

[0021] The cylindrical side wall 18 of the base may be made of flexible plastics sheeting or thin flexible metal, such as aluminium sheeting, seated in a groove 19 in the bottom section 10 of the base. The top section 8 of the base has depending side walls 20, with a corresponding groove 21 for housing the wall 18. (see Figure 5) Thus, the lightweight wall 18 may be made in two half sections, one of which is adapted as a sliding door in an appropriate groove, allowing easy access to the bottle 6 of gas. The bottle of gas is seated on a base plate 22 of metal, which includes a hole through which the pole 2 may pass, and is adapted to sit on top of the bottom section 10 of the base (see Figure 4).

[0022] The deflector dish 4 or parasol is also shown in Figure 7. This is made in at least two, and preferably four identical sections 23, which have flanges 24 on the inside (see Figure 3) by which the sections 23 may be secured together, for example by screws. This means that the dish may be of relatively large diameter, for example greater than one metre, and preferably about 1.2 metres, but easily broken down into four parts for packing and shipping. Preferably, the outer circumferential flange 25 forms a small skirt, which may be scalloped or otherwise provided with a decorative finish (not shown). As it is possible to easily provide a larger diameter, and deeper, dish than heretofore, it will readily be appreciated that the heat output which is deflected downwardly is greatly increased.

[0023] The use of plastics and lightweight components in the alternative embodiment described above for the base structure means that the components of the base may be manufactured at substantially lower unit cost, making the unit more affordable to the home user. Also, the use of lightweight components, and components which may easily be packed into a single box measuring approximately 1 metre by 0.3 metres by 0.15 metres is possible, which makes the unit more manageable for shipping purposes, storage by the retailer and purchase by a home user. The parts are easy to assemble and the whole unit may be disassembled if desired.

[0024] Figure 8 illustrates another aspect of the invention, not limited to a gas parasol heater with an offset pole of lightweight construction as described with reference to Figures 3 to 7 above, but also to heaters with a central pole of standard, heavier, construction, as shown in Figures 1 and 2. A larger, extended table 30 extending over the edge of the base structure may be moulded in plastics as part of the base structure or as a separate table top which rests on top of the base structure, made in plastics or metal. The table top is preferably split in sections prior to assembly, for instance into two clip together sections.

[0025] In alternative embodiments, multiple curved dish sections are provided which may be attached together, or may already be attached at the apex and adapted to be folded or fanned out to form a rigid dish

structure in a dome shape. Metallic fabric, foil, or metal-coated heat-resistant fabric may be used to open out the dish structure like an umbrella. It is essential that the dish be collapsible, not necessarily provided in multiple sections.

[0026] Figure 9 illustrates an embodiment in which the dish 154 is made of thin curved metal segments 173 which overlap and which are attached at the apex 182, so as to fold out or fan out into a multiple section dish configuration. This is easier to assemble and is more readily collapsible.

[0027] Figure 10 shows a further embodiment in which like parts are shown with like reference numerals as shown and described above with reference to Figure 1. However, the dish 254 is constructed as an umbrella, firmly attached to the crown of the burner, and made of metal or metalized fabric, or metal coated heat-resistant fabric, collapsible in the manner of a conventional umbrella or parasol.

[0028] Different sized diameter umbrellas may be provided for attachment to the burner to deflect heat over different areas, with the possibility of providing heat to one, two, or three or more tables below the heater. Further advantages of making the dish as an umbrella are lighter weight for reducing shipping costs, and the possibility to print patterns or advertising material on the fabric.

Claims

1. A gas parasol space heating appliance, comprising a base structure (51) for housing a bottle of gas, the base structure supporting a pole (52), the pole supporting a gas burner arrangement (53) with a dish deflector (54) supported thereon, characterized in that the deflector dish (54) is collapsible, and has a sufficient depth so as to extend substantially to or below the level of the base of the burner (53), when assembled in use and when mounted over the gas burner.
2. A heating appliance according to claim 1, wherein the dish (54) comprises multiple sections (73, 82) adapted to engage or be hinged together.
3. A heating appliance according to claim 2, comprising two to six separate dish sections.
4. A heating appliance according to any one of claims 1 to 3, wherein the diameter of the assembled dish (54) is greater than one metre.
5. A heating appliance according to claim 4, wherein the diameter of the assembled dish (54) is about 1.1 to 1.2 metres, most preferably 1.125 metres.
6. A heating appliance according to any of claims 1 to 5, wherein the depth of the assembled dish (54) is

in the range of about 180 to 240 millimetres.

7. A heating appliance according to any of claims 1 to 6, wherein the top of the assembled dish includes a flat surface (82). 5
8. A heating appliance according to claim 1, comprising multiple curved dish sections (23) which prior to assembly are already attached at the apex, and adapted to be folded or fanned out to form a rigid dish structure in the assembled heating appliance. 10
9. A heating appliance according to claim 1, wherein the deflector dish (54) is comprised of a collapsible umbrella structure, made of metallic fabric or metal-coated heat resistant fabric. 15
10. A heating appliance according to any of claims 1 to 9, comprising a base structure (1) for housing a bottle of gas, the base structure supporting a pole (2), the pole supporting a gas burner (3) arrangement with a dish deflector (4) supported thereon, wherein in that the pole (2) is offset to one side of the base structure, and wherein only the ground-engaging part (10) of the base structure is adapted to bear the load of the pole. 20 25
11. A heating appliance according to claim 10, in which the top (8) of the base structure and the walls (18) thereof do not bear any substantial loading force from the pole (2), and are made entirely of lightweight materials. 30
12. A heating appliance according to any of claims 1 to 11, in which the top (58,8) of the base structure (51,1) is provided with or is adapted so as to include an outer table or tray surface (59,9). 35
13. A heating appliance according to claim 12, comprising in addition, an extended table surface (30), adapted to rest upon the said top (58,8) of the base structure (59,9). 40

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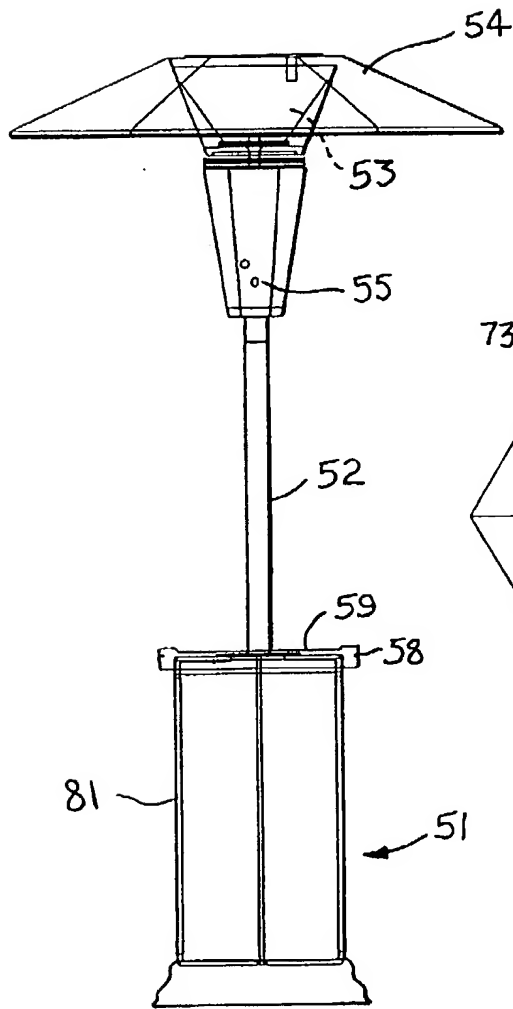


FIG. 1

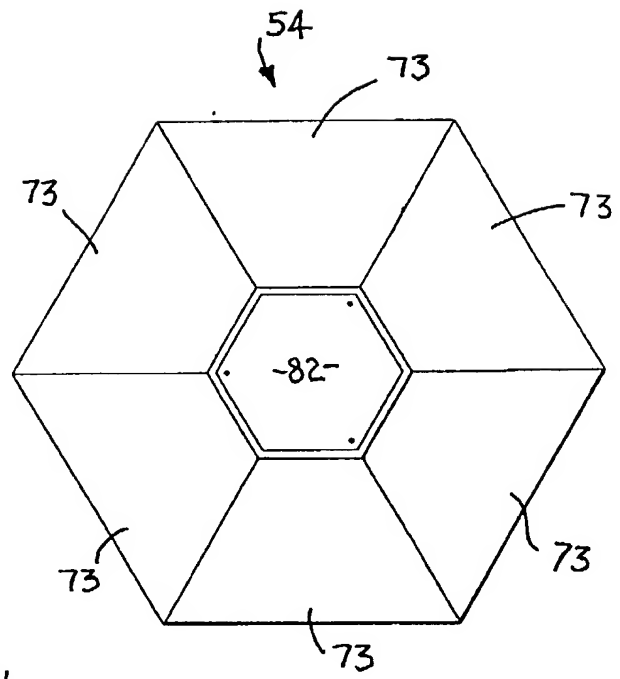


FIG. 2

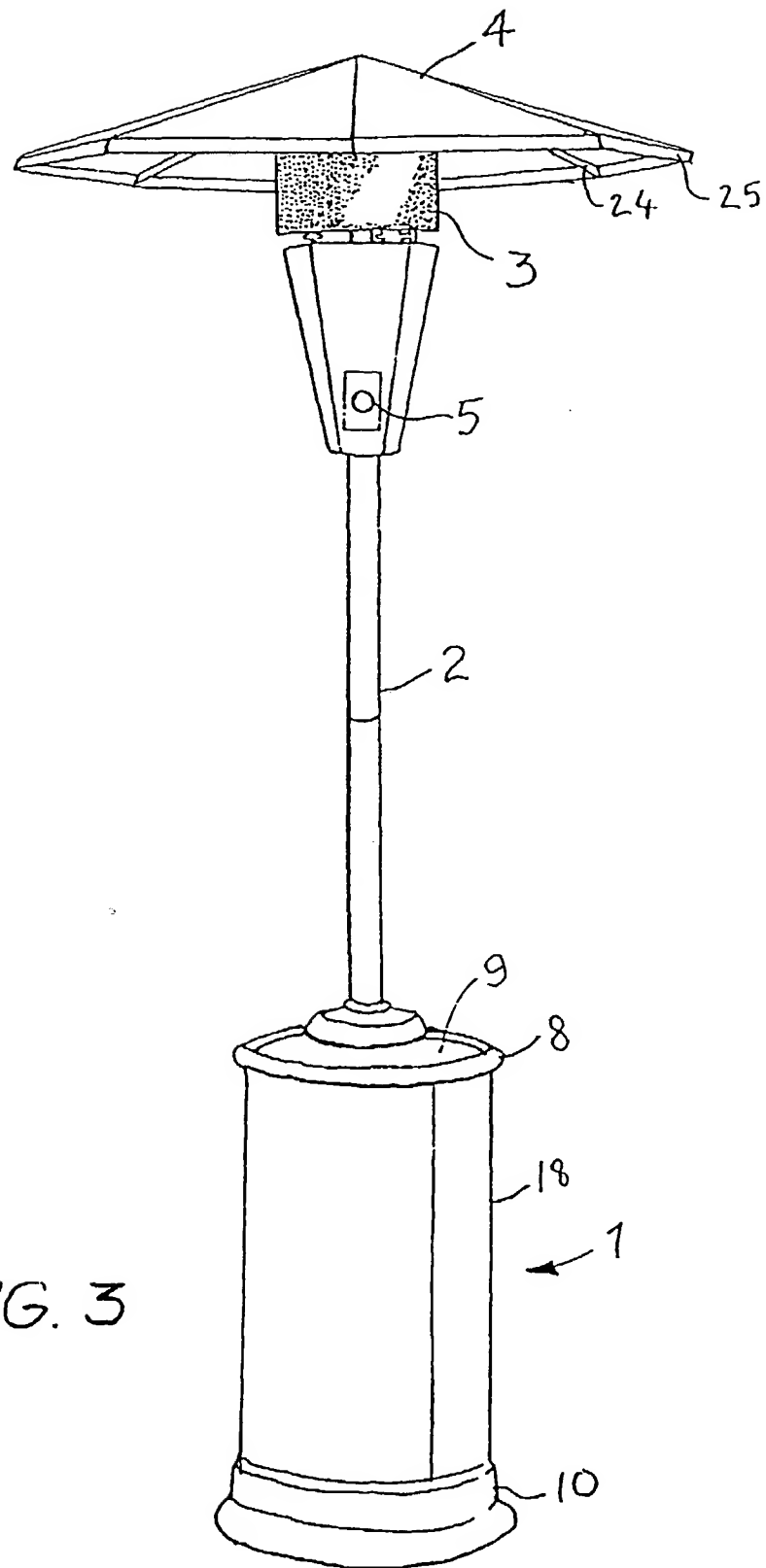


FIG. 3

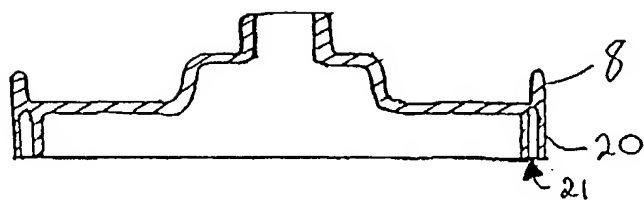


FIG. 5

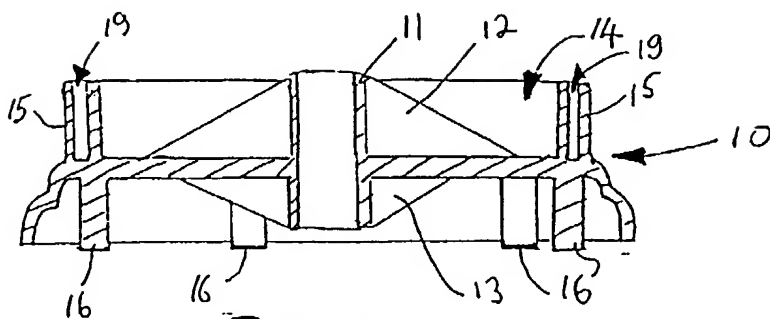


FIG. 6

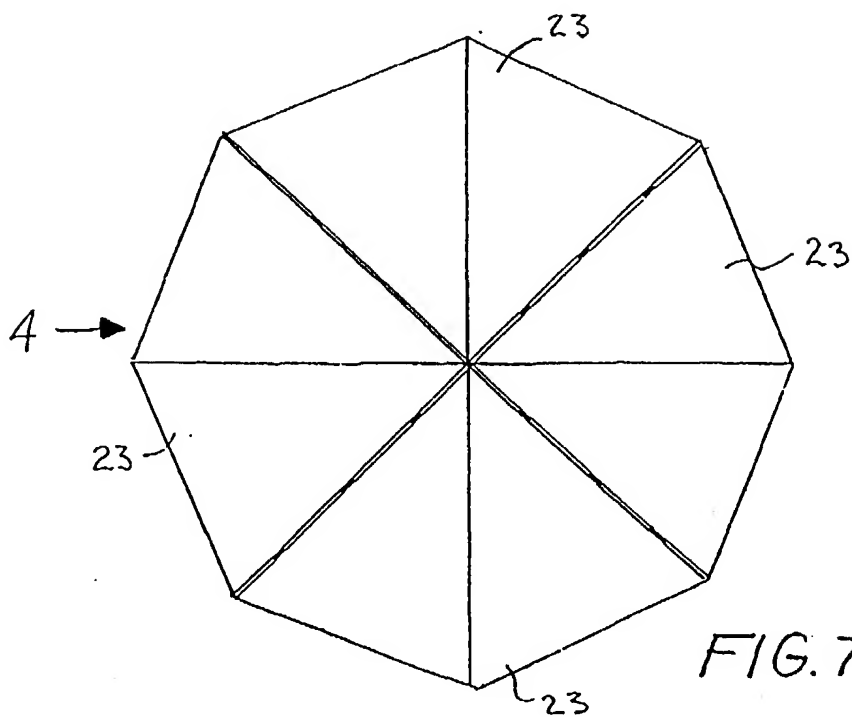
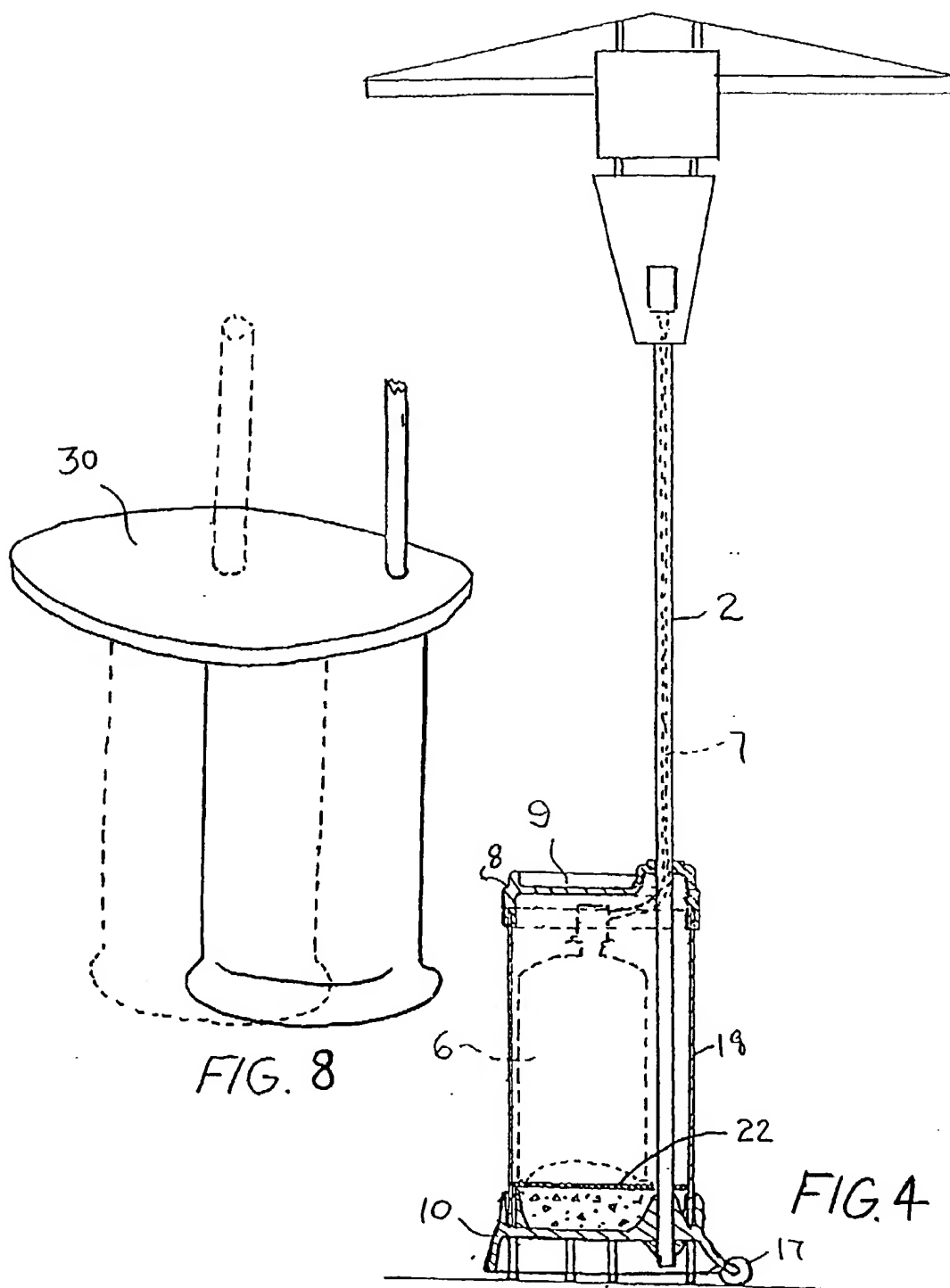


FIG. 7



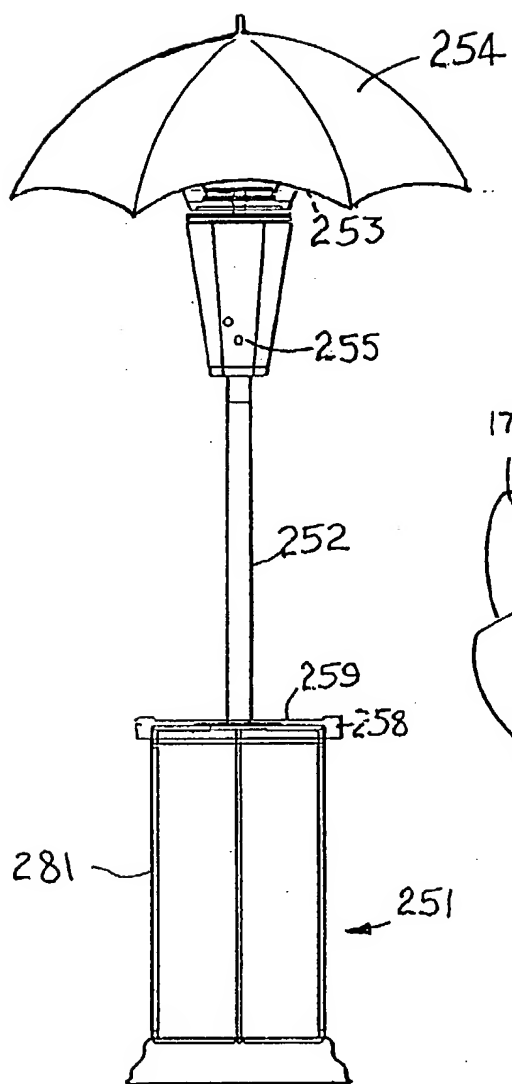


FIG. 10

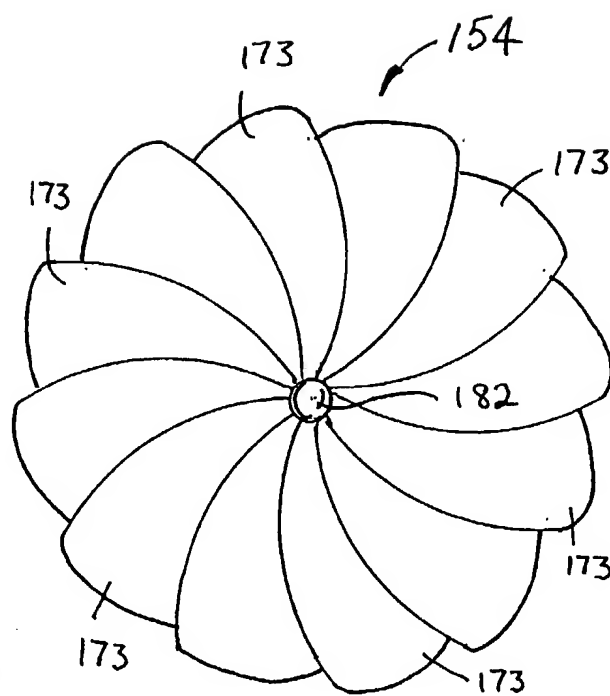


FIG. 9



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EUROPEAN SEARCH REPORT

Application Number
EP 99 20 2172

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
P,X P,A	FR 2 764 677 A (COLLET JEAN) 18 December 1998 (1998-12-18) * page 2, line 1 - line 21 * * page 5, line 11 - page 8, line 7 * * page 12, line 10 - page 14, line 21 * * figures 1,2,8-12 * -----	1,2,4,5, 8,9 7,10	F23D14/76 F23D14/70 F23D14/28 F24C1/12 F24C15/22
A	FR 2 044 254 A (ANGLADE JEAN) 19 February 1971 (1971-02-19) * page 2, line 17 - line 39 * * figure 7 * -----	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			F23D F24C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 4 October 1999	Examiner Coquau, S
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EP 99 20 2172

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04-10-1999

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